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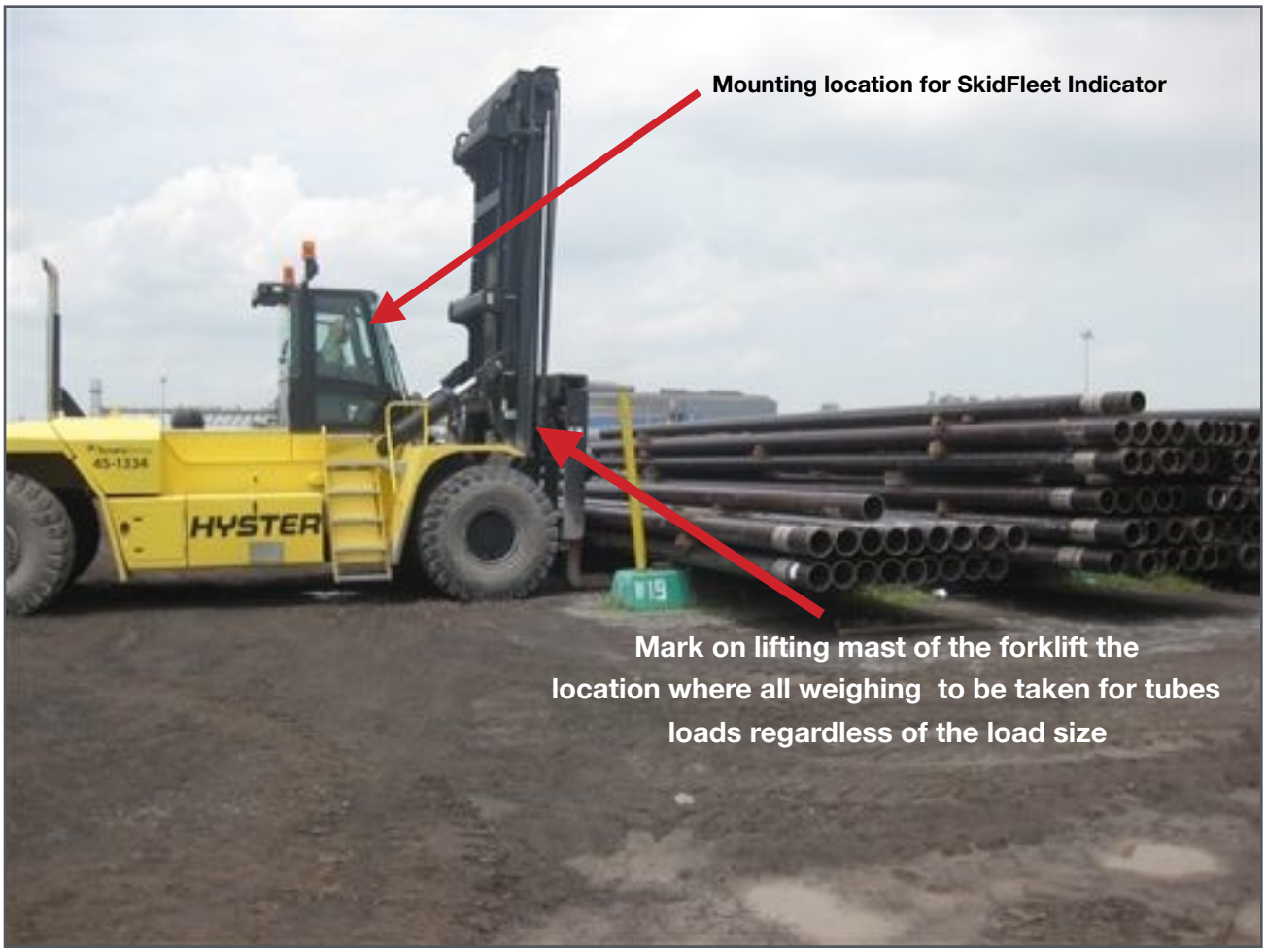
Installation & Calibration - Usage Guide



Ver. 1.05

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Installation & Calibration for Tamsa SkidFleet System

This **SkidFleet** mobile system, Version V3.0 installation & calibration guide describes how to install, calibrate, test and use your on-board check weighing & utilization with downtime reasons with overload function. Following the instructions in this guide will enable you to get your system operating quickly and easily. In the event that you require additional assistance, please contact customer support via e-mail at support@skidweigh.com or visit www.skidweigh.com or contact us at the address or contact number below:

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Safety

Always disconnect the vehicle battery while installing SkidFleet system or any other electronic product. Make sure sure that unit, pressure transducer and any other associated cables are securely mounted and do not impede any of the vehicle's controls. Use care when routing the components cables. Route the cables where they will be protected. Use commonly accepted install practices for after market industrial vehicle electronic devices. The installation of the SkidFleet systems should only be performed by an acknowledged lift truck dealer technician or end user electro and hydraulic technical installer.

Here are two acceptable methods of making a wire connections:

* Soldering your connections (recommended)
* Crimp connectors (with the use of the proper crimping tool)

Regardless of the method you choose, ensure that the connection is mechanically sound and properly insulated. Use high quality electrical tape and shrink tubing where necessary.

This product is connected directly to the vehicle's ignition switch, 12 to 55 V DC. There is no on-off switch on the unit.

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Electro-Magnetic Compatibility

CE conformity to EC directive 89/336 (EMC) by application of harmonized standards: Interference stability EN 61000-6-2 and EN 61326-1 interference emit EN 61000-6-3, EN 61326-1 for the pressure transducer.

SkidFleet Series

Our policy is one of continuous improvement and the information in this document is subject to change without notice. Check that software version displayed on LCD is the one applicable for your application.

Overview of components

The standard **SkidFleet** system consist of two main components:

* Digital indicator with wiring harness, mounting bracket
* Hydraulic pressure transducer with 3 wires cable
* Installation & calibration manual and operator usage instruction

Operational principal

The **SkidFleet** system check weighing operational principal is based on the hydraulic pressure transducer mounted in the vehicle lifting hydraulic circuit that will automatically activate the “weighing cycle / specific algorithm ” every time a skid load is lifted just above the ground. The increase in pressure is converted in an electronic signal at the sample rate of 16000 readings which is converted into a load weight reading. The SkidFleet models equipped with the impact detection system have the impact module mounted inside the SkidFleet enclosure.

Pressure transducer installation

The pressure transducer must be installed in the lifting hydraulic line ***between the lift control valve and lift cylinder(s).*** Mount a T-piece in lifting hydraulic line. In some cases you can install the pressure transducer in the flow divider, drilling and tapping for 1/4”-18 NPT male in spare plug (if only single or double mast configuration) or in the body of the flow divider. Also, you can drill and tap on any “larger elbow” that might be available in the hydraulic lifting circuit found in vehicles with larger hoses to accommodate larger vehicle lifting capacities .




Pressure transducer installation precautions

Before installation of the pressure transducer the hydraulic lift circuit must be pressure free.
There are two ways to do that:

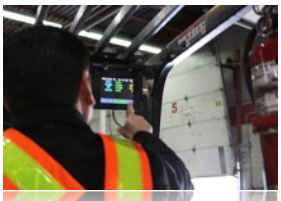
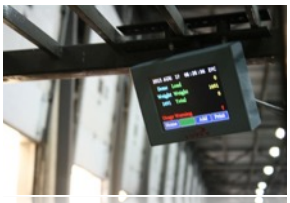
1. Place the forks on the ground in their lowest position and make the hydraulic system pressure free by tilting the mast

forward. The chain(s) should be slack.
2. Lift the forks and position them on the top of a supporting fixture. Start lowering the lifting cylinder into its lowest position. Be sure that chain(s) are slack.

Make sure that that installed pressure transducer will not touch any moving parts or assembly of the vehicle while in normal operation. Pressure transducer has **1/4"-18 NPT male thread**. **Use thread seal to ensure tight fit.**

Selecting the mounting location for digital indicator

Use the mounting bracket to fasten digital indicator on the vehicle dashboard, side railing or preferably on the top of the operator guard enclosure, right hand side.


There are many examples of mounting locations that will depend on the vehicle model. However, additional mounting items such as a flat brackets may be needed to help secure the unit to upper right corner of the guard or side railing.

Compact size

All of the SkidWeigh systems are compact size, housing dimension of only 178 mm x 127 mm x 43 mm.
Electrical Connections

Note: The main cable for pressure transducer and power supply are the same colour code for all SkidFleet versions.
Digital indicator with five wires single cable.

Pressure transducer cable (Cable with 3 wires: red,white and black)

Electrical Connections

- **Orange Wire (+) Ignition switch "on position"**
- **Brown Wire (-) Battery negative**
- **Red Wire, connect to RED wire of the pressure transducer cable**
- **Black Wire, connect to BLACK wire of the pressure transducer cable**
- **White Wire, connect to WHITE wire of the pressure transducer cable**

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Electrical power short circuit protection

- All of the SkidFleet systems are internally short circuit protected with resettable fuse. There is no need to install external inline fuse in orange wire connected to the ignition switch, vehicle positive connection 12 to 55 V DC.
- Automotive 60 V load dump protection. Reversal power supply protection.

"Quick test to determine if electrical connections are done correct"

After you have connected electrical power and pressure transducer cable you can check the system operation.
- Tap on **Home input** and tap on the **"Clock & More" icon** on LCD display.

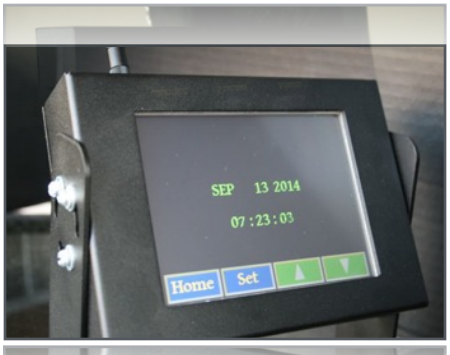
- Tap on the "Pressure Transducer Test" icon. The LCD display will show digital readout of the sensor

- *If the above test is valid than the system and pressure transducer electrical connections are done right.*

- *The next procedure will be to calibrate the SkidFleet weighing function*

Date / Time Set Up

Tap on the icon showing **Clock & More.**



- Tap on the icon "Set Clock".
- Use **"Set" and "arrow up" and "arrow down"** input to change time and date if required
- When done tap on **"Home"** icon to save the values.

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Vehicle ID#

- Tap on the icon **“Admin”**.

- Password table will be shown.
- Input a following password: **A123** and press **“Enter key”**.
- Input valid Vehicle ID#

Note: Maximum 4 digits !

- Tap on **“Enter key”** to confirm the vehicle ID#.

Downtime Causes

- In **“Home”** page tap on **“Admin”** icon. In password table input **A123** and press **“Enter key”**.
- Press on **“Downtime Causes”** icon
- Default reasons will be shown on LCD display
- Tap check boxes to enable or disable reasons
- Any of the reasons can be edited
- Press “Edit” icon to change description
- When description changed, press **Enter key**

Note: Default last reason shown on LVCD display (Other) **CAN NOT be disabled!** This “Other” reason will be automatically activate after pre determined idle time.

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- General Instructions For Load Weight Calibration Procedure

To initiate calibration of the load measurement process you must press **“Home” icon.** The password table will be shown. Input the **A123** password.

The **TAMSA SkidFleet system** calibration is custom made software algorithm that requires manual input to initiate calibration of empty and loaded forks. During the normal weighing process when loaded forks are lifted the weighing cycle is initiated by the operator manual input by pressing **“Weigh”** icon shown on the bottom of the LCD display.

(Length of time required to re-adjust load on the forks before load weighing cycle is activated is not limited)

- **Important:** Follow instructions on LCD display to complete calibration of empty and loaded forks. (LCD messages such as “**TAP OK WHEN FORKS UP**” , “**TAP OK WHEN FORKS DOWN**”, “**TAP OK WHEN LOAD UP**”, etc.)
  After the calibration is finished you must input overload value and press **“Enter key”**.
  MAKE SURE THAT YOU HAVE A KNOWN LOAD WEIGHT AND KEEP IT NEARBY TO COMPLETE THE CALIBRATION.

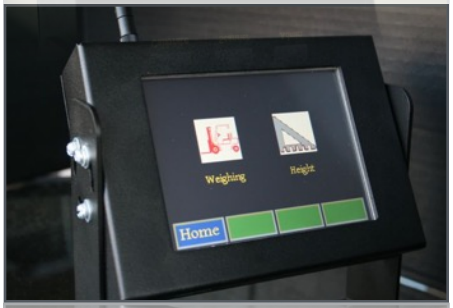
- For the best results use at least minimum calibration load test weight of 30 to 50% of maximum lifting capacity of the lift truck. Use customer floor scale or find a known load weight within the operational facility.

Important:

If you want the system to show load weight in pounds, use the known load weight in pounds and enter that value accordingly. The same would apply if you want the system to show load weight in kilograms.

Starting point for weighing function calibration

- Turn ignition switch to on position.
LCD display will show standard weighing mode.
Tap on **“Home”** icon.



- With LCD showing all of the icons, tap on the **Admin** icon. The password table will be shown. - Input **A123** and press **“Enter key”**.
- Tap on the **“Weighing”** icon to initiate calibration process.

Follow instructions shown on LCD display.

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Operational Cycle

When ignition switch is turned on system LCD display will show normal operational mode.

Note: Reporting of data to the base station and USB port are automatic.

Only input from the operator that is required is to initiate load weight and to identify downtime reason.

* Overload warning is automatically detected, shown to the operator on LCD screen, audio alert is activated, recorded and the event is reported to the base station
* Downtime reason automatically detected as the "OTHER". It's up to operator to choose a valid cause.
* Default allowed "Idling time" for Tamsa application is 300 seconds.

(Idling time defined as vehicle standing without or with load)

* Idling time range is from 1 to 999 seconds and can be changed.
* Weighing cycle initiated by operator by pressing **"Weigh"** icon located on the bottom of the LCD screen.
* Load weight automatically shown on LCD screen, recorded and reported to the base station
* Minimum load weight before data send to the base station is 100.
* Minimum load weight can be changed to any other value from 1 to 9999.

Manage Data with USB Recordings

(Mobile Units and Base Station)

- Insert memory stick into USB port
- Tap on the icon **"Admin".** Input password **A123** and press **"Enter key"**.
- Press on **"Saved Data"** icon and follow instructions on LCD screen

LCD Screen Showing

2014-Oct-28
Save Data to USB:
Data for Date Above
Everything
Erase All Data
Back

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Quick Start Operational Guide

Turn Ignition switch On and start the vehicle

SkidFleet system will be activated.

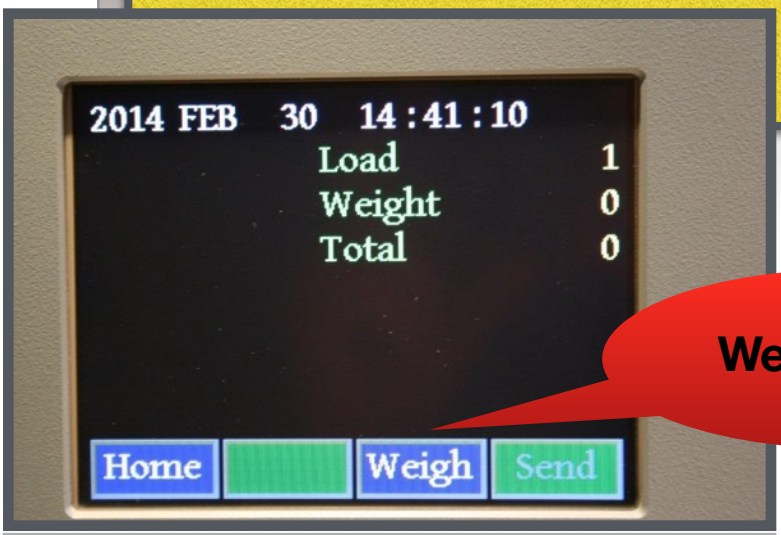
LCD screen will show date, time, **"Home"** and **"Weigh"** icons

OVERLOAD AUDIO / VISUAL WARNING IS AUTOMATIC

Weighing Cycle

1. Drive vehicle into the load to be weighed
2. Take as much time as required to get load stabilized on the forks . Lift the load to the markings on the mast
3. Once the load weight is stable on the forks, press **"Weigh"** icon shown on the LCD screen
4. Do not move vehicle or manipulate tilt or side shift during weighing process
5. Within few seconds load weight will be shown. **Weighing cycle is done!**

** All load weighing must be done at approx. same forks height within free lift or single mast stage.*



Weight data send to base station automatically. No operator input required.

Weigh icon

Overload warning (Send)

Downtime causes (Send)

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